

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
	:
Michael HERMANN) Group Art Unit: 2872
	:
Application No.: 09/817,797) Examiner: Audrey Y. Chang
	:
Filed: March 27, 2001) Confirmation No. 8356
	:
For: DEVICE FOR QUANTITATIVE)
ASSESSMENT OF THE ALIGNED	:
POSITION OF TWO MACHINE)
PARTS, WORKPIECES OR THE LIKE	:


RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

As noted to the Examiner in a telephone conference conducted on April 30, 2008, her Notice of Non-Compliant Appeal Brief mailed April 4, 2008, requiring an entire new Appeal Brief was inconsistent with the statement in the prior Notice of March 27, 2008, which expressly stated that an "entire brief is not required, just the defective section may be submitted. However, since the Examiner indicated that it would be clearer for her if the corrected sections were incorporated into the Appeal Brief, appended hereto is a new copy of the Appeal Brief into which the corrected *Status of Claims* and *Summary of Claimed Subject Matter* sections have been incorporated. No other changes have been made.

Respectfully submitted,

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APPEAL BRIEF

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 223 13-1450

Sir:

This appeal brief is presented in furtherance of the Notice of Appeal filed September 19, 2007, in connection with the above-identified application, a Notice of Panel Decision from Pre-Appeal Brief Review having been issued on October 29, 2007.

Real party in interest.

Prüftechnik Dieter Busch AG of Germany is the real party in interest.

Related appeals and interferences.

There are no related appeals or interferences.

Status of Claims.

Claims 1, 3 & 4 stand rejected and form the subject matter of this appeal. Claim 2 has been cancelled. No other claims exist.

Status of Amendments.

No amendment was filed subsequent to final rejection being appealed.

Summary of claimed subject matter.

Inasmuch as claims 1, 3 & 4 are similar in many respects and there patentability is argued jointly below, a consolidated summary of the claimed subject matter is presented below with only key differences of claim 3 being indicated.

A device for measuring or evaluating the relative angular offset position of two elements with respect to each other (Fig. 3), comprising a collimated light source 20 for producing at least one light beam (25) is connected to a first of the two elements at a known location (jz~aragraph [0018], second sentence, page 5) and a first two-dimensionally readable optoelectronic sensor (110) and at least one second two-dimensionally readable optoelectronic sensor (120) connected to a second of the two elements, each of which is in a fixed relative alignment with respect to each other (paragraph [0018], third sentence, page 5) at a known location such that a portion of the at least one light beam (25) is incident on a surface of an optoelectronically active layer of the first optoelectronic sensor (110, paragraph [0018], last sentence, page 5) and is reflected by the surface of the optoelectronically active layer as a light beam (125) directly onto a surface of the at least one second two-dimensionally readable optoelectronic sensor (120, Fig. 3). An electronic means for receiving output signals from each of the optoelectronic sensors representing the coordinates at which the at least one light beam and reflected portion of the at least one light beam are detected on each respective sensor of the optoelectronic sensors, processing the signals, and computing the relative angular offset position of the two elements with respect to each other based on the coordinates detected (paragraph [0019], spanning pages 5 & 6). In alternative embodiments to which claim 3 is directed, a portion of the light beam incident on the first two-dimensionally readable optoelectronic sensor is reflected as a plurality of light beams (125, 225, 325; Fig. 4) in a folded beam path (125, 125'; Fig. 5 modification of Fig. 4) by a surface of an optoelectronically active layer of the first optoelectronic sensor (110) directly onto the second two-dimensionally readable optoelectronic sensor (see paragraphs [0021] and [0022], page 6).

Grounds of rejection to be reviewed on appeal.

Whether claims 1, 3 and 4 are unpatentable under 35 U.S.C. § 112, first paragraph as failing to meet the written description requirement.

Whether claims 1, 3 and 4 are unpatentable under 35 U.S.C. § 112, first paragraph as being based on a non-enabling disclosure.

Whether claims 1, 3 and 4 are unpatentable for indefiniteness under 35 U.S.C. § 112, second paragraph.

Whether claims 1, 3 and 4 are unpatentable under 35 U.S.C. § 103(a) over the Holzl '998 patent when viewed in conjunction with applicant's admitted prior art.

Argument.

Rejection of claims 1, 3 and 4 as being unpatentable under 35 U.S.C. § 112, first paragraph as failing to meet the written description requirement.

As noted by the Examiner, to satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. It has been held that there is no *in haec verba* requirement for literal use of the claim language, and that it is sufficient that newly added claim limitations be supported in the specification through express, implicit, or inherent disclosure. Furthermore, it is stated in MPEP § 2163III(a) that:

A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97. In rejecting a claim, the examiner must set forth express findings of fact regarding the above analysis which support the lack of written description conclusion. These findings should:

(A) Identify the claim limitation at issue; and

(B) Establish a *prima facie* case by providing reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. A general allegation of "unpredictability in the art" is not a sufficient reason to support a rejection for lack of adequate written description.

In the present case, the Examiner has failed to establish facts that demonstrate the specification does not describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention without any explanation of the type required as to why that is the case.

On the other hand, applicant has submitted a Declaration of Roland Hölzl (hereafter, the "Hölzl Declaration"), the inventor of the U.S. Patent No. 5,026,998 which the Examiner relied upon in her rejections under § 103 which provides factual evidence that directly refutes the assumptions and conclusions expressed by the Examiner. The first paragraph of section 4 of the Declaration contains a statement by one of ordinary skill in that art that the specification "reflects the fact that The Inventor was in possession of the invention recited in The Claims," and then, in the following paragraphs of that section explains in detail why such is the case. As noted by the Court in its decision in *In re Lange*, 644 F.2d 856 (CCPA 1981), 209 USPQ 288 "The disclosure in question must be read in light of the knowledge possessed by those skilled in the art, and knowledge can be established by affidavits of fact composed by an expert." Thus, applicant having established the knowledge of those skilled in the art by expert declaration, in the absence of facts which rebut those established by the declarant, not merely the examiner's personal opinions, the rejection based upon the written description requirement must be reversed.

Rejection of claims 1, 3 and 4 as being unpatentable under 35 U.S.C. § 112, first paragraph as being based on a non-enabling disclosure.

The same section 4 of the Hölzl Declaration referred to above also clearly establishes that one of ordinary skill in the art would know how to make and use the invention, both with respect to the known location recitations and how to measure and evaluate the relative position of two elements with respect to each other. As pointed out in MPEP § 2164.05, a "declaration or affidavit is, itself, evidence that must be considered The examiner should **never** make the determination based on personal opinion" (emphasis in original). Still further, MPEP § 21604.08 points out that the Federal Circuit has held that "[a]ll that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Further the scope of enablement must only bear a

"reasonable correlation" to the scope of the claims. See, e.g., *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970)."

Here, the declarant has explained why/how one of ordinary skill in art would be able to practice the claimed invention given the disclosure of the Lysen patent (USP 6,337,742), the fact that "the primary difference between the device described in the present application and that described in the Lysen Patent is that the beam splitter 22 of the Lysen Patent is eliminated and the reflectivity of sensor 110 of the Hermann Application is utilized instead," and that the reference in paragraph [0026] of the specification to the fact that the invention "is 'especially suited' for use in the position detection system of "German Patent Application DE 19733919 and U.S. Patent 6,049,378" (which the Examiner evidently does not contend is invalid for lack of an enabling disclosure) is a clear disclosure that the techniques for measuring or evaluating the relative position of two elements with respect to each other of the Lysen Patent apply to the invention of the present application.

The Examiner's comments indicate that her rejection is based on the lack of explicit statements, but no such requirement exists in the law. To the contrary, specifications are written to the level of ordinary skill in the art. Thus, the Examiner's reference in item (2) spanning pages 2 & 3 of the final rejection to those items which are not mentioned in the specification is irrelevant given that the declarant Hözl has stated these factors to be among those items known to one of ordinary skill. The Examiner lacks the authority to simply refute factual evidence without demonstrating that the facts are incorrect and are outside of what was known in the art.

Accordingly, the rejection of claims 1, 3 and 4 as being unpatentable under 35 U.S.C. § 112, first paragraph as being based on a non-enabling disclosure is not sustainable and should be reversed.

Rejection of claims 1, 3 & 4 for indefiniteness under 35 USC § 112, second paragraph

The claims have also been objected as being confusing and indefinite; however, these objections are in reality a rejection under 35 USC § 112 and should be treated as such. The Examiner should not be permitted to circumvent applicant's right to appeal what is actually is clearly a rejection for indefiniteness under 35 USC § 112 by incorrectly calling it an

objection. The Examiner has stated “the phrases ‘known location’, is confusing and indefinite since it is not clear with respect to what are these known locations.” To support her position, the Examiner has merely conjectured reasons why one might find the claims indefinite with reference to the possibility of different coordinate systems being used, but provides no evidence which would indicate that such views would be considered problems by one working in this field. On the other hand, the Declarant Hölz explains in detail in paragraph 4 of his declaration why “the ‘known location’ recitation found in claims 1 & 3 would be found to be clear and definite by one of ordinary skill in the art” for specific reasons. The Examiner’s position is tantamount to say if one puts something in a specific spot, that person would not know its location. Furthermore, contrary to the Examiner’s position, the coordinate system used to identify the “known” location is irrelevant, as is whether multiple coordinate systems are used since known techniques exist for converting from one coordinate system to another, e.g., geodetic to XYZ, and in fact, commercial software programs are readily available that can convert and transform spatial data between any of the hundreds of known coordinate systems.

Thus, it is submitted that the appealed claims are clear and definite, so the rejection for being “confusing and indefinite” should be withdrawn.

Rejection of claims 1, 3 and 4 as being unpatentable under 35 U.S.C. § 103(a) over the Holzl ‘998 patent when viewed in conjunction with applicant’s admitted prior art.

In response to the Examiner’s rejection, applicant submitted the above mentioned Hölzl Declaration after having previously submitted a declaration of Heinz P. Bloch (hereafter, the Bloch Declaration). As also noted above, the declarant Hölz is the inventor of the U.S. Patent No. 5,026,998 which the Examiner has relied upon in her rejections under § 103. This Declaration provides factual evidence that directly refutes the assumptions and conclusions expressed by the Examiner and explains why the invention is not obvious in view of his patent and the acknowledged commercially available optoelectronic sensors (see, paragraphs 3 & 5 of the Hölz Declaration. Similarly, paragraphs 3-7 of the Bloch Declaration also explain why the reflectivity known sensors was not obvious to use, and in particular, why it would not be obvious to use their reflectivity to modify the device of the Hölz patent.

In the face of such evidence from the inventor of the patent upon which she relies and from an independent, accomplished engineer and inventor working in the relevant field, it is improper from the Examiner to rely upon her personal opinion as to what one of ordinary skill in the art would have found to be obvious without providing any factual evidence to support her positions. That is, declaration evidence provided clearly and unequivocally establishes that the invention would not have been obvious from anything taught that is taught by the applied prior art even when considered in combination with that which was known to those of ordinary skill in the art. For example, paragraphs 3 & 5 of the Hölzl Declaration, state in part:

... at that the time of that the Hermann Application was filed, I and others in the field considered the reflectivity of the sensors to be a problem which had to be minimized or eliminated, for example, by blackening internal surfaces to avoid stray reflections, etc. and I know of no one that considered the reflectivity of the optoelectronic sensors to be a usable feature prior to that discovery by Mr. Michael Hermann, the inventor of the Hermann Application (hereafter, "The Inventor").

... there is simply no basis for the Examiner's conclusion that it would have been obvious to use the reflective properties of the commercially available optoelectronic sensors in the manner taught by the Hermann Patent Application and in the manner set forth in The Claims. Likewise, while the operation principles of the device of the Hermann Patent Application are the same as in the Lysen Patent (not the device of My Patent which does and cannot use a housing in which first and second two-dimensionally readable optoelectronic sensors are fixed), there is simply no factual basis for the Examiner's conclusion that it would be "an obvious matter of design choice" to make the *structural* changes necessary to go from the device of the Lysen Patent to that of the Hermann Patent Application while retaining the same basic function, let alone to do so going from the very different method and apparatus of My Patent to that of the Hermann Application.

Likewise, paragraphs 4-7 of the Bloch Declaration state in part:

the specification of the Hermann Application referred to by the Examiner merely indicates the existence of commercially available optoelectronic sensors that can be used in the practice of the invention of the Hermann Application. However, I find nothing in that description which would suggest knowledge of this fact by anyone other than the inventor of the Hermann Application. Furthermore, based on my knowledge and experience, the reflectivity of such sensors was never used for alignment determination purposes prior to the invention of the Hermann Application, nor was it

recognized that the reflectivity of such sensors was sufficient for that purpose. To the contrary, the reflectivity of such sensors was generally treated as a characteristic which needed to be suppressed for alignment purposes by the use of an anti-reflectivity coating.

5. The Examiner's comments appear not to take into consideration either the lack of known reason to use the reflectivity of known optoelectronic sensors in an alignment device or the factors that would necessarily have to have been recognized for someone to consider such use of the known optoelectronic sensors....

6.... Without a reason or motivation for making such wholesale changes (which I find to be totally absent from the Hölzl Patent, the Examiner's reasoning, and the state of the art as I am aware of it), it is simply not reasonable to think that those working in the field would find it obvious to change from an established practice to one that had never been previously considered.

7.... the evidence indicates that one of ordinary skill in the art would not have been able to arrive at a device having the features of the claims of the Hermann Application based on anything objectively derivable from the Hölzl Patent, and the mere existence of commercially available optoelectronic sensors that could be used to practice the invention of the Hermann Patent.

Not only is the Examiner's conclusions of obviousness erroneous and contrary to facts established by declaration, but they have been arrived at using an improper "obvious matter of design choice" standard of obviousness that is contrary to the law as stated by both the Board of Appeals in the case of *Ex Parte Gerlach and Werner*, 212 USPQ 471, (1980) which states that:

There is nothing in the statutes or the case law which makes 'that which is within the capabilities of one skilled in the art' synonymous with obviousness.

The examiner provides no reason why, absent the instant disclosure, one of ordinary skill in the art would be motivated to change [the structure of the references to that which was claimed].

and the Federal Circuit which has stated that the mere fact that a modification could be made does not make it obvious absent a teaching of desirability; see, *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986) and *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). In the present case, not only has the Examiner failed to provide the requisite reason or motivation for what she contends to be obvious, but she also does not even attempt

to determine what changes would be needed since more than a mere change of one sensor for another is required. Thus, the Examiner has not made the factual determinations set forth in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 48 (Supreme Court 1966), which include providing reasons why one having ordinary skill in the art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention based upon some teaching, suggestion or inference in the prior art, *Uniroyal, Inc. v. Rudkin-Wiley*, 5 USPQ2d 1434 (Fed. Cir. 1988). The statement that something is an “obvious design choice” is a mere conclusion for which some factual evidence in the prior art must be established, something the examiner has wholly failed to do and something that the Declaration emphatically refutes.

Instead of performing a proper assessment of the obviousness of the claimed invention, the examiner has attempted to attack the declaration evidence on the basis that it does not describe the construction of the sensors and because the declarant is not an inventor of sensors having a reflective surface (see, section 1, paragraph (1), page 2 of the final office action), neither of which is relevant. That is, since the sensors of the invention are of conventional construction and it is the use, not the manufacture of such sensors to which the invention relates, what is material is that the declarant is knowledgeable of the reflective nature of such sensors and the manner in which they have been used, which is the case for both declarants.

Furthermore, rather than address the reasons that the declarants have found the invention to be unobvious, for example, the examiner has failed to indicated where it is taught or suggested by the AAPA (or Hölzl) that the reflective capabilities of the surface of a first optoelectronic sensor can be utilized in a two-sensor position determination system when the declarants state that such was unknown at the time that the present invention was made, the Examiner has essentially taken the position that as long as the operational principle remains the same, it would be obvious to convert a transmissive system to reflective system, irrespective of what structural changes might be necessary to do so (see, the sole full paragraph, page 9 of the final office action). It is incumbent upon the examiner, in the face of the declaration evidence submitted, to provide some evidence which refutes the declaration statements and demonstrates that someone other than this applicant recognized that the

reflectance possessed by the known optoelectronic sensors was anything other than a detriment and could be used to provide accurate position determinations in combination with a second optoelectronic sensor in the manner of the present invention, which she has not done. In this regard, applicant submitted to the examiner evidence of the results of a search of the USPTO patent database that revealed more than 1000 patents which disclose such anti-reflectance coatings for optoelectronic sensors, clearly supporting the declarants' views that one of ordinary skill in the art considered the reflective characteristics of the surface of an optoelectronic sensor to be an undesirable feature as evidenced by the common use of anti-reflection coatings on such sensors.

Furthermore, the examiner has made no attempt to refute the evidence provided which also included the fact that the devices of the referenced U.S. Patents 6,337,742 and 6,476,914 (which are more recent than that of the Hölz patent relied upon by the Examiner) found it necessary to use mirrors and a prism instead of the reflective capacity of the sensors, further indicating that the potential usefulness of the reflective properties of known sensors could be used and need not be counteracted. In this regard, it is pointed out that the Federal Circuit has held that proceeding contrary to accepted wisdom in the art is evidence of nonobviousness. *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (1986).

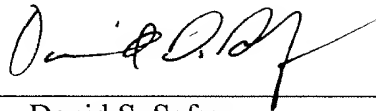
Therefore, in light of the deficiencies in the Examiner's assessment commented upon above, even if an initial *prima facie* case of obviousness had been established by the proposed combination of the teachings of Holzl and AAPA, it has been overwhelmingly rebutted so that the burden of proof shifted back to the Examiner to provide factual evidence, not her own opinions, which would support a conclusion of obviousness despite the evidence submitted by applicant, something that has not even been attempted by the examiner. Consequently, the rejection of claims 1, 3 and 4, under § 103(a), is improper and should now be reversed.

Conclusion

All of the examiner's rejections have been demonstrated to be improper and contrary to established facts. Therefore, the Board is requested to reverse all of the appealed rejections.

Accompanying this Brief is payment of the Appeal Brief fee of \$ 255.00, and any overage or shortage thereof may be charged or credit to Deposit Account No. 502478(741124-79).

Respectfully submitted,

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Claims appendix.

1. (Currently Amended) Device for measuring or evaluating the relative angular offset position of two elements with respect to each other, comprising:

- a collimated light source means for producing at least one light beam connected to a first of the two elements at a known location;

- a first two-dimensionally readable optoelectronic sensor and at least one second two-dimensionally readable optoelectronic sensor connected to a second of the two elements each of which are in a fixed relative alignment with respect to each other at a known location such that a portion of said at least one light beam incident on a surface of an optoelectronically active layer of the first optoelectronic sensor is reflected by the surface of the optoelectronically active layer as a light beam directly onto a surface of the at least one second two-dimensionally readable optoelectronic sensor;

- electronic means for receiving output signals from each of the optoelectronic sensors representing the coordinates at which the at least one light beam and reflected portion of the at least one light beam are detected on each respective sensor of the optoelectronic sensors, processing the signals, and computing the relative angular offset position of the two elements with respect to each other based on the coordinates detected.

2. (Canceled)

3. (Currently Amended) Device for measuring or evaluating the relative angular offset position of two elements with respect to each other, comprising:

- a collimated light source for producing at least one light beam connected to a first of the two elements at a known location;

- a first two-dimensionally readable optoelectronic sensor and at least one second two-dimensionally readable optoelectronic sensor;

- a housing, connected to a second of the two elements at a known location, in which the first and second two-dimensionally readable optoelectronic sensors are positioned relative to one another at a known location with respect to said housing such that a portion of the light beam incident on the first two-dimensionally readable optoelectronic sensor is reflected as a

plurality of light beams in a folded beam path by a surface of an optoelectronically active layer of the first optoelectronic sensor directly onto the second two-dimensionally readable optoelectronic sensor;

- electronic means for receiving output signals from the optoelectronic sensors, processing the signals representing the coordinates at which the at least one light beam and reflected portion of the at least one light beam are detected on each respective sensor of the optoelectronic sensors, and computing the relative angular offset position of the housing relative to the light source based on the coordinates of incidences of the at least one light beam on the surfaces of the two-dimensionally readable optoelectronic sensors detected.

4. (Currently Amended) Device for measuring or evaluating the relative and angular offset position of two elements with respect to each other, comprising:

- a collimated light source means for producing at least one light beam at a known coordinate location;

- a first two-dimensionally readable optoelectronic sensor;

- at least one second two-dimensionally readable optoelectronic sensor in a fixed relative alignment with respect to the first two-dimensionally readable optoelectronic sensor at a known location such that the at least one light beam from the light source means is incident on a surface of an optoelectronically active layer of the first two-dimensionally readable optoelectronic sensor and a portion of the at least one light beam is reflected by the surface of the optoelectronically active layer as at least one light beam directly onto a surface of the at least one second two-dimensionally readable optoelectronic sensor;

- electronic means for receiving output signals from each of the optoelectronic sensors, processing the signals representing the coordinates at which the at least one light beam and reflected portion of the at least one light beam are detected on each respective sensor of the optoelectronic sensors, and computing the relative angular offset position of the light source means relative to the incidences of the at least one light beam on the surfaces of the two-dimensionally readable optoelectronic sensors.

Evidence appendix.

1. Declaration of Roland Hölz filed April 17, 2007 and considered by the examiner in her Office Action of June 15, 2007.
2. Declaration of Heinz P. Bloch filed January 7, 2005 and considered by the examiner in her Office Action of March 30, 2005.
3. USPTO patent database printout submitted with applicant's amendment filed December 1, 2003, neither addressed nor refused entry by examiner in following office actions.

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Michael HERMANN)	Group Art Unit: 2872
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Application No.: 09/817,797)	Examiner: A. Y. Chang
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ASSESSMENT OF THE ALIGNED	:	
POSITION OF TWO MACHINE)	
PARTS, WORKPIECES OR THE LIKE :		

DECLARATION OF ROLAND HÖLZL

I, Roland Hölzl, declare that:

1. I am the same Roland Hölzl that is the inventor of the shaft alignment checking method of U.S. Patent No. 5,026,998 (hereafter, "My Patent"), and am an inventor or co-inventor of the inventions of U.S. Patent Nos. 6,566,871; 6,515,294; 6,476,914; 6,146,000; 5,049,757, and others.

2. I have reviewed a copy of United States Patent Application Publication US 2001/0052983 A1, which I understand corresponds to the above-identified U.S. Patent Application (hereafter, the "Hermann Application") as originally filed. I have reviewed the attached Amendment After Second RCE which I understand contains the claims that presently exist in the application (hereafter, "The Claims") and the appended communication from the Examiner dated November 7, 2006 (hereafter, the "Office Action"). I also have reviewed Lysen et al. U.S. Patent No. 6,337,742 (hereafter, the Lysen Patent) which is the U.S. counterpart of the German Patent

Application DE 38 14 466 that is described in paragraphs [0003] and [0004] of the Hermann Application.

3. Based on my knowledge and experience, those of ordinary skill in the art did not know that the reflectivity of the surface of sensors that were commercially available prior to the March 27, 2001, filing date of the Hermann Application was sufficient to enable them to be usable as either the mirror surfaces 6a of My Patent or in the manner in which the reflectivity of the sensors 110, 120 is used as is described in Hermann Application. To the contrary, at that the time of that the Hermann Application was filed, I and others in the field considered the reflectivity of the sensors to be a problem which had to be minimized or eliminated, for example, by blackening internal surfaces to avoid stray reflections, etc. and I know of no one that considered the reflectivity of the optoelectronic sensors to be a usable feature prior to that discovery by Mr. Michael Hermann, the inventor of the Hermann Application (hereafter, "The Inventor").

4. Based on my knowledge and experience, the statements contained in items 6 & 8-10 of the Office Action, incorrectly reflect the knowledge of one of ordinary skill in the alignment art. Furthermore, based on my knowledge and experience in the alignment art, the Hermann Application adequately discloses how to make and used the invention defined by The Claims and reflects the fact that The Inventor was in possession of the invention recited in The Claims, with respect to which the "known location" recitation found in claims 1& 3 would be found to be clear and definite by one of ordinary skill in the art as explained further below.

Considering first the “known location” language, it is known to me that it has been standard practice in the shaft alignment field to first determine the distance of at least one of the sensors on one of the shafts from the laser beam on the other of the shafts, e.g., a tape measure, and for this reason all suppliers of alignment devices ship their products with a tape measure and have been doing so for decades, and as stated in the last paragraph of column 4 of the Lysen Patent, “the distance of the position detectors 23 and 25 from the radiation source S is obtained in any manner independently of the measuring device.” Furthermore, it would have been apparent to one of ordinary skill in the alignment art that the primary difference between the device described in the Hermann Application and that described in the Lysen Patent is that the beam splitter 22 of the Lysen Patent is eliminated and the reflectivity of sensor 110 of the Hermann Application is utilized instead, so that all of basic comments contained therein, including those in the first paragraph of column 5 with regard to how “the knowledge of this distance [i.e., the distance between the light source S and the detectors 23 or 25] needed for the calculation can be obtained,” would have been recognized to apply to the invention recited in The Claims. Thus, one of ordinary skill in the art would not be confused by this recitation and would know that the recitations of “a collimated light source ...connected to a first of the two elements at a known location” and “a housing, connected to a second of the two elements at a known location” is referring to this standard practice of determining the distance between the light source and the sensor unit and would know multiple ways of doing so.


Likewise, the recitation that “the first and second two-dimensionally readable optoelectronic sensors are positioned relative to one another at a known location with respect to said housing” would have been recognized as a basic requirement of the device disclosed in the Hermann Patent Application. As noted in the Lysen Patent (see, e.g., second full paragraph of column 3), the position sensors must be aligned in the direction of projection of the beam from the light source, and since the sensors 110, 120 of the Hermann Patent Application are enclosed with the housing 500, this cannot be done without knowing the positional relationship between the housing and the sensors in it. In the design phase of the Hermann device the relative positions of the sensors with respect to the housing and the laser beam are directly determined. Furthermore, that the position of these sensors is known is readily apparent from the reference to the sensor location coordinates IC1; A and IC1; B in paragraph [0017] of the Hermann Patent Application.

Moreover, the statement in paragraph [0026] to the effect that the device of the Hermann Application has is “especially suited” for use in the position detection system of “German Patent Application DE 19733919 and U.S. Patent 6,049,378” is a clear disclosure that techniques for measuring or evaluating the relative position of two elements with respect to each other of the Lysen Patent apply to the invention of the Hermann Application.

5. With regard to the Examiner's positions stated in paragraph 12 of the Office Action, based on my knowledge and experience, the conclusions stated in that paragraph are not supported by the facts as they exist. First, based upon the facts set forth above in paragraph 3 of this Declaration, there is simply no basis for the Examiner's conclusion that it would have been obvious to use the reflective properties of the commercially available optoelectronic sensors in the manner taught by the Hermann Patent Application and in the manner set forth in The Claims. Likewise, while the operation principles of the device of the Hermann Patent Application are the same as in the Lysen Patent (not the device of My Patent which does and cannot use a a housing in which first and second two-dimensionally readable optoelectronic sensors are fixed), there is simply no factual basis for the Examiner's conclusion that it would be "an obvious matter of design choice" to make the *structural* changes necessary to go from the device of the Lysen Patent to that of the Hermann Patent Application while retaining the same basic function, let alone to do so going from the very different method and apparatus of My Patent to that of the Hermann Application.

6. All statements made herein of my/own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and may jeopardize the validity of the application or any patent issuing thereon.

April 11, 2007



Roland Hölzl

JAN 07 2005

Docket No. 741124-79

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of) **RESPONSE UNDER 37 CFR**
Michael HERMANN) **1.116 EXPEDITED PROCEDURE**
) **EXAMINING GROUP 2872**
Application No.: 09/817,797) Examiner: A. V. Chang
Filed: March 27, 2001) Confirmation No. 8356
For: DEVICE FOR QUANTITATIVE)
ASSESSMENT OF THE ALIGNED:)
POSITION OF TWO MACHINE)
PARTS, WORKPIECES OR THE)
LIKE)

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office: Fax No. (703) 872-9306 on January 7, 2005.

Kathleen M. McManus
Kathleen M. McManus

DECLARATION OF HEINZ P. BLOCH

I, Heinz P. Bloch, declare that:

1. I am the owner of Process Machinery Consulting Co., hold Bachelor and Masters of Science degrees in Mechanical Engineering, I am a licensed professional engineer in the states of Texas and New Jersey, I hold five U.S. Patents including U.S. Patent No. 4,102,052 for a "DEFLECTION INDICATOR FOR COUPLINGS" for use in monitoring and determining axial deflection or positioning of a coupling, I have authored or co-authored over 300 technical papers, I have received several awards as an engineer including the ASME/STS Engineer of the Year Award (1995) and ASME Distinguished Service Award (2001).

2. I have reviewed the above identified patent application (hereafter, the HERMANN Application) including its specification and claims, and the positions stated by the Examiner in support of her decisions indicating that the claims do not define patentable subject matter, and also U.S. Patent No. 5,026,998 (hereafter, the Hölzl Patent) and "admissions" which form the basis of the Examiner's positions.

3. I understand that a significant aspect of the definition of the invention recited in claims 1, 3 and 4 is that two-dimensionally readable optoelectronic sensors are used to determine the relative alignment of two elements with respect to each other by a portion of at least one light beam incident on a surface of an optoelectronically active layer of one of the optoelectronic sensors being reflected by its surface directly as a light beam onto a surface of another of the two-dimensionally readable optoelectronic sensors, an electronic means receiving output signals from each of the optoelectronic sensors, processing the signals, and computing the relative position of the light source means relative to the incidences of the light beam on the surfaces of the two-dimensionally readable optoelectronic sensors. In particular, I understand a key issue to be whether or not it would have been obvious to use the reflectivity of as a means for directing light from one optoelectronic sensor to another.

4. A review page 5, lines 14-20 of the specification of the Hermann Application referred to by the Examiner merely indicates the existence of commercially available optoelectronic sensors that can be used in the practice of the invention of the Hermann Application. However, I find nothing in that description which would suggest knowledge of this fact by anyone other than the inventor of the Hermann Application. Furthermore, based on my knowledge and experience, the reflectivity of such sensors was never used for alignment determination purposes prior to the invention of the Hermann Application, nor was it recognized that the reflectivity of such sensors was sufficient for that purpose. To the contrary, the reflectivity of such sensors was generally treated as a characteristic which needed to be suppressed for alignment purposes by the use of an anti-reflectivity coating.

5. The Examiner's comments appear not to take into consideration either the lack of known reason to use the reflectivity of known optoelectronic sensors in an

alignment device or the factors that would necessarily have to have been recognized for someone to consider such use of the known optoelectronic sensors. That is, it would have to have been recognized that the reflectivity of the known optoelectronic sensors as well as their sensitivity would have been suitable for a sufficiently strong light source to be aimed at the first sensor without damaging it and that a sufficient amount of light would be reflected as a beam (not as dispersed light) to be readable at the other sensor in a way that would provide sufficiently accurate results. Apart from the Hermann Application, e.g., paragraph [0007] on page 2, I know of no recognition of this fact by those working in the alignment field.

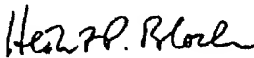
6. Furthermore, I can see no reason why anyone reviewing the Hölzl Patent would find it obvious to abandon his light transmissive arrangement and adopt the light reflective arrangement proposed in the Hermann Application. This is particularly the case because an entirely different positioning of the two sensors relative to each other and the light source would be required as can be appreciated from a comparison of Figs. 3 & 4 of the Hermann Application with Figs. 2 & 3 of the Hölzl Patent which, in turn, would require modification of the packaging of the components and how they would be usable on the shafts being aligned. Without a reason or motivation for making such wholesale changes (which I find to be totally absent from the Hölzl Patent, the Examiner's reasoning, and the state of the art as I am aware of it), it is simply not reasonable to think that those working in the field would find it obvious to change from an established practice to one that had never been previously considered.

7. Therefore, based on my experience in the field to which the invention of the Hermann Application is directed, and based on the facts noted above, the evidence indicates that one of ordinary skill in the art would not have been able to arrive at a device having the features of the claims of the Hermann Application based on

anything objectively derivable from the Hölzl Patent, and the mere existence of commercially available optoelectronic sensors that could be used to practice the invention of the Hermann Patent.

The undersigned Declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

January 4, 2005
Date



Heinz P. Bloch, P.E.

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PAT. NO.	Title
1 6,650,916	T Method and apparatus for providing high contrast imaging
2 6,650,474	T Optical filter and optical device provided with this optical filter
3 6,650,455	T Photonic mems and structures
4 6,650,419	T Interferometric apparatus for precision measurement of altitude to a surface
5 6,649,951	T Light-receiving element and photoelectric conversion device
6 6,647,350	T Radiometric temperature measurement system
7 6,646,742	T Optical device and method for multi-angle laser light scatter
8 6,646,636	T Display system utilizing ambient light and a dedicated light source
9 6,643,024	T Apparatus and method(s) for reducing the effects of coherent artifacts in an interferometer
10 6,642,998	T Measuring device
11 6,642,994	T Optical exposure apparatus and photo-cleaning method
12 6,637,882	T Eye viewing device for retinal viewing through undilated pupil
13 6,636,678	T Method and apparatus for waveguide optics and devices
14 6,635,912	T CMOS image sensor and manufacturing method thereof
15 6,633,381	T Polychromatic fluorescence measurement device
16 6,631,004	T Single-pass and multi-pass interferometry systems having a dynamic beam-steering assembly for measuring distance, angle, and dispersion
17 6,628,432	T Image reader and image reading method
18 6,628,355	T Liquid crystal display panel including a light shielding film to control incident light

- 19 [6,627,892](#) **TI** [Infrared detector packaged with improved antireflection element](#)
- 20 [6,627,864](#) **TI** [Thin image sensor package](#)
- 21 [6,626,532](#) **TI** [Vari-focal spectacles](#)
- 22 [6,625,336](#) **TI** [Optical sensor having dielectric film stack](#)
- 23 [6,621,584](#) **TI** [Method and apparatus for in-situ monitoring of thickness during chemical-mechanical polishing](#)
- 24 [6,621,571](#) **TI** [Method and apparatus for inspecting defects in a patterned specimen](#)
- 25 [6,621,561](#) **TI** [Doppler rotational velocity sensor](#)
- 26 [6,621,557](#) **TI** [Projection exposure apparatus and exposure methods](#)
- 27 [6,620,712](#) **TI** [Defined sacrificial region via ion implantation for micro-opto-electro-mechanical system \(MOEMS\) applications](#)
- 28 [6,620,249](#) **TI** [Method and apparatus for depositing thin layers](#)
- 29 [6,619,799](#) **TI** [Optical lens system with electro-active lens having alterably different focal lengths](#)
- 30 [6,618,209](#) **TI** [Optical apparatus](#)
- 31 [6,618,150](#) **TI** [Compact transform spectrometer based on sampling a standing wave](#)
- 32 [6,618,141](#) **TI** [Device for measurement of the spectral reflectance and process for measurement of the spectral reflectance](#)
- 33 [6,618,128](#) **TI** [Optical speed sensing system](#)
- 34 [6,617,623](#) **TI** [Multi-layered gate for a CMOS imager](#)
- 35 [6,614,827](#) **TI** [High power laser](#)
- 36 [6,614,742](#) **TI** [Optical head, magneto-optical head, disk apparatus and manufacturing method of optical head](#)
- 37 [6,611,546](#) **TI** [Optical transmitter comprising a stepwise tunable laser](#)
- 38 [6,608,961](#) **TI** [Optical system including a planar waveguide](#)
- 39 [6,608,847](#) **TI** [Tunable laser with suppression of spontaneous emission](#)
- 40 [6,608,685](#) **TI** [Tunable Fabry-Perot interferometer, and associated methods](#)
- 41 [6,608,677](#) **TI** [Mini-lidar sensor for the remote stand-off sensing of chemical/biological substances and method for sensing same](#)
- 42 [6,608,671](#) **TI** [Detector and screening device for ion channels](#)
- 43 [6,606,446](#) **TI** [Miniature variable attenuator](#)
- 44 [6,606,340](#) **TI** [Continuously grating-tuned external cavity laser with automatic suppression of source spontaneous emission and amplified spontaneous emission](#)
- 45 [6,606,171](#) **TI** [Digitizing scanner](#)
- 46 [6,606,144](#) **TI** [Projection exposure methods and apparatus, and projection optical systems](#)
- 47 [6,603,443](#) **TI** [Compact display system controlled by eye position sensory system](#)
- 48 [6,597,449](#) **TI** [Real time process control of optical components using linearly swept tunable laser](#)
- 49 [6,593,636](#) **TI** [High speed silicon photodiodes and method of manufacture](#)
- 50 [6,593,213](#) **TI** [Synthesis of layers, coatings or films using electrostatic fields](#)

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